Rehn, James A. G., and Hebard, Morgan. Studies in American Tettigoniidae (Orthoptera) III. A synopsis of the species of the genus Neoconocephalus found in North America, north of Mexico. Trans. Am. Ent. Soc. 40, No. 4, Dec. 1914, pp. 365–413.

Record *Neoconocephalus robustus crepitans*, *N. palustris* and *N. retusus* from Plummers Island, pp. 394, 401 and 404.

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Record *Orchelimum laticauda* from Plummers Island, and *O. agile* and *O. minor* from nearby localities, pp. 32, 55 and 60.

——— Studies in American Tettigoniidae (Orthoptera) V. A synopsis of the species of the genus Conocephalus (Xiphidium of authors) found in North America north of Mexico. Trans. Am. Ent. Soc. 41, No. 2, June 1915, pp. 155–224, pls. 15–20.

Record *Conocephalus brevipennis* and *C. nemoralis* from Plummers Island and *C. saltans* from a nearby locality, pp. 186, 191 and 219.

——— Studies in American Tettigoniidae (Orthoptera) VII. A revision of the species of the genus Atlanticus (Decticinae). Trans. Am. Ent. Soc., Vol. 42, No. 1, March 1916, pp. 33–99, pls. VI–VIII.

Record *Atlanticus testaceus*, and *A. americanus* from Plummers Island and *A. davisi* n. sp. from nearby locality, pp. 53, 67 and 81.

——— Studies in the Dermaptera and Orthoptera of the Coastal Plain and Piedmont Region of the southeastern United States. Proc. Ac. Nat. Sci., Philadelphia, 58, Part II, pp. 87–314, pls. 12–14, May 1916.

Record 15 species from Plummers Island and 25 other species from points within our area.

NOTES ON NORTH AMERICAN TACHINIDAE, INCLUDING THE DESCRIPTION OF ONE NEW GENUS.

By Harrison E. Smith,

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Doryphorophaga Townsend.

This is evidently a valid genus, with *Lydella doryphorae* Riley as the genotype.[1] Mr. Walton[2] has considered it expedient to retain *doryphorae* in *Neopales (Phorocera* of authors) "until

[1] Proc. Ent. Soc. Wash., Vol. 14, p. 164.
[2] Proc. U. S. N. M., Vol. 48, p. 183.

further and more reliable external characters, especially in the case of the male, are discovered." Apparently all students of the Tachinidae, including the author of *Doryphorophaga*, at the time of erecting the same, have overlooked the fact that the males of *doryphorae* possess two pairs of orbital bristles, as do the females. This point together with other general external characters of each sex appear to substantiate the validity of the genus, and amply separate it from *Neopales*.

Before the writer are 26 specimens (20 males and 6 females) of *D. doryphorae*, taken in Massachusetts, Penikese Island, Conn., New Jersey and Montana. Of these specimens, 20 males and 3 females show the presence of discal macrochaetae on the intermediate abdominal segments,[1] and 3 females have them absent. Thus, it is plain that this character is a variable one; within the limits of the species, as is also, the degree of the hairiness of the eyes in the female, which may vary from moderately hairy to almost absolute bareness. As far as known, *D. doryphorae* is a common parasite upon the potato beetle, *Leptinotarsa decemlineata* Say. Specimens from the western portion of the United States appear identical in every respect with those taken in the East.

For the present it is desirable to include two other described species under *Doryphorophaga*, namely, *D. aberrans* Townsend[2] and *Exorista dorsalis* Coq.[3] These species are evidently congeneric, but as to whether they are congeneric with D. doryphorae remains for further study to determine. They differ in having the facial ridges ciliate at most, on the lowest third, the ocellar bristles vestigial (not wanting in any of the 13 specimens at hand) and the abdominal chaetotaxy of aberrans and dorsalis in relation to doryphorae, are in need of more extended investigation.

Following is a synopsis of the genus, as it now stands, together with a detailed description of *D. aberrans*. The generic description is written under the tentative assumption, that all three species herein included are congeneric.

Diameter of head at vibrissae less than at base of antennae, vibrissae usually placed on a level with the front edge of the oral margin, eyes hairy (sometimes almost bare in females of *doryphorae*). Facial ridges bristly on the lowest fourth to four-fifths, antennae nearly as long as the face,

[1] In several of the specimens discal macrochaetae are present on the second abdominal segment and absent on the third. These are included in the number of specimens showing the presence of discal macrochaetae.

[2] D. aberrans Town., Ent. News, Vol. XXVII, p. 217.

[3] Exorista dorsalis Coq., Canad. Ent., XXX, p. 236.

sides of face on the lower half bare. Frontal bristles in a single row, descending to base of third antennal joint, two pairs of orbital bristles in each sex. Ocellar bristles normal or vestigial, proclinate; second joint of arista about as broad as long, cheeks approximately one-sixth as wide as the eye height. Antennae usually inserted on or slightly above the eye middle, the abdomen bearing marginal and usually discal macrochaetae. Apical cell open, ending just before wing tip, third longitudinal vein bearing several bristles at its base, other veins bare.

TABLE OF SPECIES.

1. Ocellar bristles normal, abdominal segments on the basal third to one-half densely gray pollinose, apical pair of scutellar bristles usually vertical (common throughout the U. S.).....*doryphorae* Riley.
   Ocellar bristles vestigial, apical pair of scutellar bristles not vertical.. 2
2. Abdomen wholly brassy gray pollinose (Mass., Conn. and Virginia), *aberrans*. Town.
   Abdomen brassy gray pollinose on the second segment and an inverted triangular spot on the third concolorous, remainder of abdomen shining black (Mass., Pa. and Ga.).....*dorsalis* Coq.

Doryphorophaga aberrans Town.

Length 6–9 mm. Front in male about three-fourths, in female about as wide as either eye, frontal vitta opaque brownish black, not as wide as sides of front. Posterior half of parafrontals golden yellowish pollinose, anterior half and the parafacials concolorous bright silvery gray pollinose. Antennae black or faintly fulvous, the third antennal joint in each sex about three times as long as the second, arista microscopically pubescent, thickened on approximately the basal fourth, sides of face from one-third to three-fifths as wide as the median depression. Thorax marked with four black vittae besides a short median vitta posterior to the transverse suture; three postsutural and three sternopleral macrochaetae. Scutellum clothed with erect bristly black hairs on the dorsum, bearing a discal pair, three pairs of long marginals and a shorter cruciate apical pair of macrochaetae. Legs black, front pulvilli not as long as the last tarsal joint, middle tibiae on the outer front side, each bearing a single strong bristle near the middle; hind tibiae pectinate with a row of bristles of unequal length. Abdomen with a narrow median black vitta, bearing discal and marginal macrochaetae. Wings hyaline, the costal and marginal cells frequently tinged with yellow, costal spine obsolete, third longitudinal vein usually with three bristles at its base, calypteres milky white. Puparium from 7–8 mm. in length, anal stigmata slightly raised, widely separated, the dorsal surface reticulated.

Described from 3 males and 7 females reared from *Doryphora decemlineata* Say by Mr. L. B. Ripley at New Haven, Conn., September 13, 1913, and by Messrs. C. W. Collins, C. E. Hood and R. T. Webber, Melrose Highlands, Mass.

Leskia Desv. and allies.

While reviewing Dr. Townsend's recent revision[1] of the several species included under *Leskia analis* Say, by the late Mr. D. W. Coquillett, it was evident to the writer, that errors certainly existed in the conclusions as arrived at by Dr. Townsend.

In attempting to diagnose Mr. Coquillett's study of the genus *Leskia*, it seems unquestionably apparent that he first included and erroneously determined *Leskiomima tenera* Wied. as *Leskia analis* of Say. He then described *Myobia depile*.[2] Later discovering his error he properly placed Wiedemann's *tenera* in the genus *Leskiomima* and made his *depile* a synonym of *Leskia analis*. Since the type of Say's *analis* is not in existence, to my knowledge, and must thus remain an unknown factor, it is evidently proper to recognize Dr. Townsend's *Myobiobsis similis*, which is at least, a recognizable species. *Myobia depile* Coq., however, has been entirely overlooked in the paper under consideration.

Mr. C. W. Johnson has very kindly afforded the writer the opportunity of examining one of the types of *Myobia depile* Coq., and it is quite apparent that *Leskiopalpus calidus* Town. is synonymous. Hence, the genotype of *Leskiopalpus*, by present designation, is *L. depile* Coq.

Sipholeskia occidentalis Coq.[3]

Myobia gilensis Town.[4]

Spilochaetosoma new genus.

Front at base of antennae produced nearly one-half the eye width, the antennae inserted rather below the middle of the eyes. Frontal bristles descending to the base of the third antennal joint, cruciate from vertex to base of antennae, reclinate from thereon to a point nearly half way down the parafacials. Outside of the frontal row of bristles a parallel row of bristles and scattered bristly black hairs to the eye margins. Parafrontals twice as wide anteriorly as at their vertex. Orbital bristles absent, the ocellar bristles strong proclinate. Width of head at the oral margin as great as at the base of antennae; vibrissae cruciate, inserted far above front edge of oral margin, two or three bristles above each. Antennae descending to the middle of the face, the second and third joints of equal length, arista bare, the second joint as broad as long. Parafacials

[1] Smiths. Misc. Coll., Vol. 49, p. 627–629; Jan. 1916.
[2] Proc. Acad. Nat. Sci. Phil., p. 313; Sept. 1895.
[3] Smiths. Misc. Coll., Vol. 49, p. 628; Jan. 1916.
[4] Psyche, 1897, 40.

on lower half bare, cheeks nearly one-half as broad as the eye height. eyes densely hairy. Apical cell entering costa far before the extreme wing tip, open, fourth longitudinal vein appendiculate beyond bend. Abdomen ovate, bearing discal and marginal macrochaetae, the hypopygium considerably exerted and doubled forward beneath the venter. Type, the following species.

Spilochaetosoma californica new species.

Male: Robust, black, first and second antennal joints, palpi, tip of proboscis, sides of first three abdominal segments and hypopygium yellow. Frontal vitta opaque velvety dark brown, parafrontals and fascialia silvery pollinose with a faint golden tinge in certain reflections. Sides of face approximately one-half as wide as the median depression, cheeks thickly beset with bristly black hairs. Proboscis short, shining black and chitinized on the intermediate third, fleshy at the tip. Front at vertex nearly one-half the eye width. Thorax gray pollinose, marked with four prominent black vittae. Postsutural dorso-central bristles three, sternopleurals four. Apical two-thirds of scutellum yellowish, bearing three pairs of long marginal macrochaetae and a strong discal pair. Legs black, front pulvilli about one and one-half times as long as the last tarsal joint. Middle tibiae bearing a row of four long stout bristles on the outer front side, the hind tibiae pectinate with a row of bristles of unequal length.

Hairs of abdomen depressed. Second abdominal segment bearing a discal and a marginal pair of macrochaetae, the third a discal pair and a marginal row, and the fourth segment a discal and marginal row. Hypopygium bearing many stout black bristles upon the first and second segments. Wings faintly infuscate along the costa, veins brownish, the third longitudinal vein bearing six or seven bristles at its base, posterior end of hind cross-vein nearer the margin of the wing than to the small cross-vein. Calypteres whitish.

Described from a male specimen taken in the mountains near Claremont, Calif., by Mr. Carl F. Baker.

Holotype:—U. S. N. M. Cat. No. 20,930.

Under the head of notes and exhibition of specimens the following were given:

THE ELATERID GENUS OISTUS OF CANDEZE.

By J. A. Hyslop,

Bureau of Entomology.

The genus *Oistus* was described by Candeze to include two Mexican elaterids of the tribe Chalcolepidiini. The genus is very unsatisfactorily distinguished from the Oriental genus *Campsosternus,* the chief differential character used by the great

French Entomologist being the shape of the mandibles which, in a specimen of *Oistus sphenosomus* Cand. in the National Museum collection and determined by Mr. Champion, are decidedly acute at the tip while the mandibles of the specimens of *Oistus cacicus* Cand. in the same collection are truncate as in the original generic diagnosis. The genus includes at present, comprehending the species herein described, five species.

In a collection of miscellaneous elaterids collected by the field agents of the Office of Forest Insect Investigations and submitted to me for determination by Dr. A. D. Hopkins, I found a single female belonging to this genus which is described below.

Oistus edmonstoni sp. nov.

Elongate, subparallel, depressed, shining. Color, sanguineous brown above; head, antennae, legs, and ventral surface almost black. Vestiture, long, silky and white. Head not margined in front, flattened, slightly concave and strongly punctate; mandibles acute at the tip; maxillary palpi long, terminal joint securiform; antennae moderately long and slender. Prothorax broader than long, sides nearly parallel, rounded in front, posterior angles divergent, lateral margins strongly swollen and sulcate, anterior margin rounded over the head, with a decided median emargination, posterior margin crenulate within the posterior angles; proplurae densely and strongly punctate; prosternum rounded in front with chin piece rugosely punctate, smooth and feebly punctate posteriorly. Meso-metasternal suture almost obliterated; mesosternum horizontal posteriorly and abruptly, perpendicularly deflexed in front. Posterior coxae gradually widened inwardly. Elytra four times as long as the prothorax, wider than pronotum, not striate but with three slightly elevated ridges; very finely punctate; sides parallel to apical third and then rather obliquely attenuated. Tarsi pilose beneath but not nearly so strongly as in *O. cacicus* Cand.; tarsal joints three and four very feebly produced below, not at all lobed. Length 27 mm., width 7.5 mm.

Type:—U. S. N. M. No. 21044, a female.

Type locality:—Ashland, Oregon, on cone of Douglas Fir, Sept. 23, 1913.

The type was collected by Mr. W. D. Edmonston for whom the species is named.

The following table will serve to separate the species now recognized:

a. elytra metallic black or black with suture red.
  b. entirely metallic black except the legs which are brown. *submetallicus*
  bb. prothorax red, elytra black with suture red..... *suturalis*
aa. elytra reddish brown, yellowish or piceous.

c. tarsi broadly cordiform.
d. prothorax with smooth bare spots on either side of disc before middle, elytra marmorately pilose.....*cacicus*
dd. prothorax without smooth bare spots on the disc, vestiture of elytra not marmorate.....*sphenosomus*
cc. tarsi with joints feebly broadened, not cordiform.....*edmonstoni*

Oistus Candeze, Monogr. Elat. I, p. 338, 1857.

1. *Oistus cacicus* Cand. 1857 Monogr. Elat. I, p. 339, Pl. VI, fig. 5 (type of the genus by present designation). Champion 1894, Biol. Cent. Amer. Col. III, pt. 1, p. 292, Pl. XIII, fig. 8.
Ludius cacicus Dej. 1833 Cat. ed. 3, p. 107, Cand., l.c.
Oistus griseosignatus (Dupont i. litt.) Gem. and Har. Cat. Col. V, p. 1506.
2. *Oistus sphenosomus* Cand. 1857 Monogr. Elat. I, p. 339. Champion 1894, l.c., p. 292, Pl. XIII, fig. 7.
3. *Oistus suturalis* Champion. 1894 l.c. p. 553, Pl. XXIV, fig. 5. Schwarz 1906 Gen. Ins. 46, Pl. II, fig. 13.
4. *Oistus submetallicus* Dand. 1900 Ann. Soc. Ent. Belg., Vol. 44, p. 83.
5. *Oistus edmonstoni* Hyslop 1917 above.

NOTES ON THE BIOLOGY OF SCHIZONOTUS SIEBOLDII RATZ.[1]

By R. A. Cushman,

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Very few cases are on record of chalcids feeding as external parasites on hosts unprotected by the tissue of their food plant or food substance or by their cocoons or other protection of the pupa. A notable example of this is found in the eulophid genus *Euplectrus*, the life-history of one species of which, *E. comstockii* Howard, is well known in its relation to the cotton worm. We are now able to add another species to the chalcids having this habit, *Schizonotus sieboldi* Ratz., a species introduced from Europe. In connection with his original description of this species (Ichn. d. Forstins., III, 1852, p. 230), Ratzeburg stated that it was reared by von Siebold from *Chrysomela populi*, and from the date of emergence judged that it must have been reared from full-grown larvae or pupae of the host.

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[1] Published by permission of the Secretary of Agriculture.